AC BRUSHLESS SERVOMOTORS - MBM3x

MBM3x Brushless Servomotors are AC PM Synchronousservomotors. They have been designed using the latest generation of magnets and construction techniques to provide very high performance, low cogging and torque ripple. They can be supplied with resolver or Incremental / absolute encoder.

Their main characteristics are:

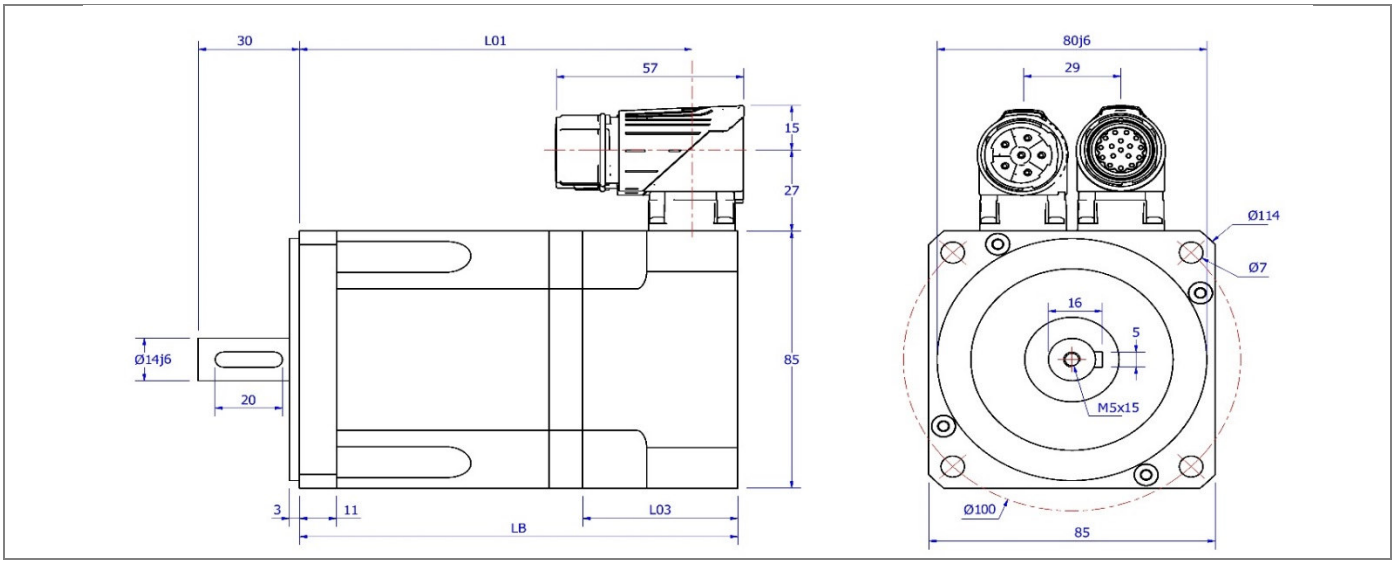
Frame size 85mm
Rare earth magnets for high performance
8 pole construction for high torque density
Low cogging and torque ripple
Sinusoidal back EMF
Integrated PTC thermal protection
Rotatable connectors
Compact design
High IP rating
Smooth finish

Technical Data

Tab. 1

Description / Winding code	Symbol	Motor	MBM31		MBM32		MBM33		MBM34	
		Units	1	2	1	2	1	2	1	2
Stall Torque	M_0	Nm	1,5		2,9		4,2		5,3	
Maximum Torque	Mpk	Nm	5,1	4,8	10	10	14	14	18	18
Stall Current	I_0	A	1,65	1,1	3,2	2	4,6	2,9	5,8	3,4
Peak current	I_{pk}	A	6,6	4	12,8	8	18	12	23	14
Maximum mechanical revs	N_{mec}	min-1	7000		7000		7000		6000	
Maximum revs @ 230Vac	N_{MAX}	min^{-1}	3100	1800	3200	1900	3300	2000	3300	1900
Maximum revs @ 400Vac	N_{MAX}	min^{-1}	6000	3500	6000	3500	6000	3500	5000	3000
Voltage constant	K_E	V/krpm	55	86	55	88	55	88	55	93
Torque constant	K_T	Nm/A	0,91	1,42	0,91	1,45	0,91	1,45	0,91	1,54
Rotor Inertia	J_R	kg cm^2	0,92		1,72		2,53		3,33	
Resistance @ 20°C	R_{U-V}	Ohm	9	23	3,4	8,3	1,9	5	1,4	4
Inductance @ 1 kHz	L_{U-V}	mH	16	35	7	18	4,5	12	3,5	11
Mass	m	kg	2,4		3,5		4,6		5,7	

Drawing Pic. 2



Dimension in mm Tab. 2

Feedback device	EQI1130, TTL 2048ppr, Resolver					SinCos, EKS36				
Dimension	LB		L01		L03	LB		L01		L03
Shaft - ØD	14	19	14	19		14	19	14	19	
MBM31	115	125	101	111	31	130	140	116	126	46
MBM32	145	155	131	141		160	170	146	156	
MBM33	175	185	161	171		190	200	176	186	
MBM34	205	215	191	201		220	230	206	216	
MBM31 Brake	163	163	149	149		178	178	164	164	
MBM32 Brake	193	193	179	179		208	208	194	194	
MBM33 Brake	223	223	209	209		238	238	224	224	
MBM34 Brake	253	253	283	283		268	268	254	254	

Dimension in mm Tab. 3

Flange	56B5	63B5
N	80j6	95j6
M	100	115
S	7	9
AC	85	100

Dimension in mm Tab. 4

Shaft	Dimension	
D	14j6	19j6
E	30	40
GL	20	32
GA	16	21,5
F	5	6
R	M5 x 15	M6 x 16

Values in this catalogue are true for the following conditions:

Max ambient temperature 40° C
Min ambient temperature 0 °C
Max Altitude 1000 m (above sea level)
Insulation class F (materials F & H)
RMS values
Insulation system conforms to UL
IP65 enclosure protection with shaft seal

Motor Installation B5 – V5
Cooling IC0041
Typical tolerance value ±10%
Continuous ratings apply with a rise of Δ 100K on the windings when fitted on an aluminium plate with dimensions 254 x 254 x 8mm

NiLAB reserves the right to amend the specification of this product without prior notification.

PART NUMBER COMPOSITION

1	2	3	4	5	6	7	8	9	10	11	12
M	B	M		3	2	2	0	4	7	x	x

POS. DESCRIPTION

1-3 Product
MBM= PM synchronous motor, self-cooled

4 Blank

5 Motor size
Size Three

6 Motor length
1 = Mo 1,5 Nm
2 = Mo 2,9 Nm
3 = Mo 4,2 Nm
4 = Mo 5,3 Nm

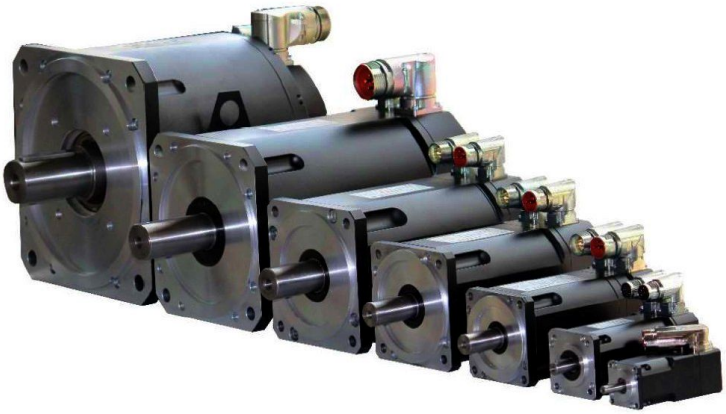
7 Voltage
1 = Winding code 1
2 = Winding code 2

8 Holding brake
0 = Without brake
1 = Permanent Magnet Brake $24V_{DC}$ ±6% M_{br} = 11Nm 16W J_{br} =1,06kgcm^2 m=0,6 kg

9 Feedback
0 = Sensor-less
1 = Heidenhain encoder EQI1130 EnDat multi-turn
4 = Encoder 2048ppr TTL LD + hall sensors
6 = Encoder 4096ppr TTL LD + hall sensors
7 = Encoder 1Vpp + position sin-cos
9 = Resolver size 15 2p 7V 10KHz
C = Encoder Biss-C MT at battery cell
W = Sick encoder EKS36 Hiperface DSL single-turn no SIL 17bit
Y = Sick encoder EKM36 Hiperface DSL multi-turn no SIL 17bit
Z = Sick encoder SKM36 Hiperface 128ppr multi-turn

10 Connection type
1 = Flying leads with cable glands
7 = M23 connectors 90° rotatable

11-12 Special version
23 =Shaft 19 x 40mm Flange 63B5
66 = IP65 Shaft Protection
90 = Thermal protection PT1000
xx = Special Shaft and Flanges (on request)



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